

In the Claims:

A complete listing of claims in the instant application is provided below as follows:

1 1. (Currently amended) A system for collecting measurements for
2 use by a surface profiling processing scheme, said system
3 comprising:

4 a movable platform;

5 an odometer coupled to said movable platform for measuring
6 distance that said movable platform traverses during a
7 measurement run on a surface wherein said measurement run is
8 defined by starting and stopping positions on the surface that
9 are spaced apart from one another;

10 first means mounted to said movable platform for generating
11 a measurement of inclination of the surface where said movable
12 platform is positioned when said movable platform is stationary
13 thereon;

14 second means mounted to said movable platform for generating
15 measurements of curvature of the surface as said movable platform
16 traverses the surface;

17 third means mounted on said movable platform and coupled to
18 said odometer for monitoring said distance that said movable
19 platform traverses during said measurement run and for generating
20 a signal each time said movable platform traverses a
21 predetermined amount of distance during said measurement run,
22 wherein said signal (i) is realized by at least one of a visual

23 alarm, an audible alarm and a tactile alarm, and (ii) serves as
24 an indication to stop said movable platform during said
25 measurement run; and

26 fourth means coupled to said first means and said second
27 means for collecting (i) said measurements of curvature while
28 said movable platform traverses the surface during said
29 measurement run, and (ii) said measurement of inclination at said
30 starting position, said stopping position, and each time said
31 movable platform is stopped during said measurement run following
32 the generation of said signal.

1 2. (Original) A system as in claim 1 wherein said movable
2 platform comprises:

3 a frame;

4 at least four supports coupled to said frame and contacting
5 the surface wherein said frame is supported above the surface;

6 a first three of said at least four supports being arranged
7 in a linear alignment that defines a direction of travel for said
8 frame, and a remainder of said at least four supports being
9 spaced apart from said linear alignment;

10 said first three defined by a front support, a rear support
11 and a center support centered between said front support and said
12 rear support;

13 said center support being a floating support capable of
14 substantially vertical movement; and

15 at least one of said front support, said rear support and

16 said center support being a wheel configured to roll in said
17 direction of travel.

1 3. (Original) A system as in claim 2 wherein said odometer is
2 coupled to one of said front support, said rear support and said
3 center support that is said wheel.

1 4. (Original) A system as in claim 2 wherein said first means is
2 an inclinometer mounted on said frame, said inclinometer having
3 an axis of sensitivity that is aligned parallel to said direction
4 of travel.

1 5. (Original) A system as in claim 2 wherein said second means
2 is a linear position transducer coupled to said center support
3 for generating said measurements of curvature by measuring said
4 substantially vertical movement of said center support as said
5 movable platform traverses said surface during said measurement
6 run.

1 6. (Original) A system as in claim 1 further comprising means to
2 pull said movable platform during said measurement run.

Claim 7 (Canceled)

1 8. (Original) A system as in claim 2 wherein all of said at
2 least four supports are wheels.

1 9. (Original) A system as in claim 2 wherein said center support
2 comprises a slidable support that slides on the surface.

1 10. (Original) A system as in claim 2 wherein each of said front
2 support and said center support comprises a slidable support that
3 slides on the surface.

1 11. (Original) A system as in claim 10 wherein said odometer is
2 coupled to said rear support.

1 12. (Original) (Original) A system as in claim 1 further
2 comprising fifth means coupled to said fourth means for
3 processing said measurements of curvature and each said
4 measurement of inclination in accordance with a surface profiling
5 scheme to generate surface profile measurements.

1 13. (Original) A system as in claim 12 further comprising sixth
2 means for encrypting said surface profile measurements.

1 14. (Currently amended) A system for collecting measurements for
2 use by a surface profiling processing scheme, said system
3 comprising:

4 a movable platform;

5 first means mounted to said movable platform for generating
6 a measurement of inclination of a surface where said movable
7 platform is positioned when said movable platform is stationary
8 thereon;

9 second means mounted to said movable platform for generating
10 measurements of curvature of the surface as said movable platform
11 traverses the surface;

12 third means mounted on said movable platform for monitoring
13 distance that said movable platform traverses during a
14 measurement run on the surface wherein said measurement run is
15 defined by starting and stopping positions on the surface that
16 are spaced apart from one another, said third means generating a
17 signal each time said movable platform traverses a predetermined
18 amount of distance during said measurement run wherein said
19 signal (i) is realized by at least one of a visual alarm, an
20 audible alarm and a tactile alarm, and (ii) serves as an
21 indication to stop said movable platform during said measurement
22 run; and

23 fourth means coupled to said first means and said second
24 means for collecting (i) said measurements of curvature while
25 said movable platform traverses the surface during said
26 measurement run, and (ii) said measurement of inclination at said

27 starting position, said stopping position, and each time said
28 movable platform is stopped during said measurement run following
29 the generation of said signal.

1 15. (Original) A system as in claim 14 wherein said movable
2 platform comprises:
3 a frame;
4 at least four supports coupled to said frame and contacting
5 the surface wherein said frame is supported above the surface;
6 a first three of said at least four supports being arranged
7 in a linear alignment that defines a direction of travel for said
8 frame, and a remainder of said at least four supports being
9 spaced apart from said linear alignment;
10 said first three defined by a front support, a rear support
11 and a center support centered between said front support and said
12 rear support;
13 said center support being a floating support capable of
14 substantially vertical movement; and
15 at least one of said front support, said rear support and
16 said center support being a wheel configured to roll in said
17 direction of travel.

1 16. (Original) A system as in claim 15 wherein said first means
2 is an inclinometer mounted on said frame, said inclinometer
3 having an axis of sensitivity that is aligned parallel to said
4 direction of travel.

1 17. (Original) A system as in claim 15 wherein said second means
2 is a linear position transducer coupled to said center support
3 for generating said measurements of curvature by measuring said
4 substantially vertical movement of said center support as said
5 movable platform traverses said surface during said measurement
6 run.

1 18. (Original) A system as in claim 14 further comprising means
2 to pull said movable platform during said measurement run.

Claim 19 (Canceled)

1 20. (Original) A system as in claim 15 wherein all of said at
2 least four supports are wheels.

1 21. (Original) A system as in claim 15 wherein said center
2 support comprises a slidable support that slides on the surface.

1 22. (Original) A system as in claim 15 wherein each of said
2 front support and said center support comprises a slidable
3 support that slides on the surface.

1 23. (Original) A system as in claim 15 further comprising fifth
2 means coupled to said fourth means for processing said
3 measurements of curvature and each said measurement of
4 inclination in accordance with a surface profiling scheme to
5 generate surface profile measurements.

1 24. (Original) A system as in claim 23 further comprising sixth
2 means for encrypting said surface profile measurements.

1 25. (Currently amended) A system for collecting measurements for
2 use by a surface profiling processing scheme, said system
3 comprising:

4 a movable platform that includes a frame and at least four
5 supports coupled to said frame and contacting a surface wherein
6 said frame is supported above the surface;

7 a first three of said at least four supports being arranged
8 in a linear alignment that defines a direction of travel for said
9 frame, and a remainder of said at least four supports being
10 spaced apart from said linear alignment;

11 said first three defined by a front support, a rear support
12 and a center support centered between said front support and said
13 rear support;

14 said center support being a floating support capable of
15 substantially vertical movement;

16 at least one of said front support, said rear support and
17 said center support being a wheel configured to roll in said
18 direction of travel;

19 an odometer coupled to one of said front support, said rear
20 support and said center support that is said wheel, said odometer
21 measuring distance that said movable platform traverses during a
22 measurement run on the surface wherein said measurement run is
23 defined by starting and stopping positions on the surface that
24 are spaced apart from one another;

25 an inclinometer mounted on said frame, said inclinometer
26 having an axis of sensitivity that is aligned parallel to said

direction of travel, said inclinometer generating a measurement of inclination of the surface where said movable platform is positioned when said movable platform is stationary thereon;

a linear ~~distance~~ position sensor coupled to said center support for measuring said substantially vertical movement of said center support as said movable platform traverses said surface during said measurement run, wherein measurements of said substantially vertical movement are indicative of measurements of curvature of the surface;

a distance monitor mounted on said movable platform and coupled to said odometer for monitoring said distance that said movable platform traverses during said measurement run and for generating a signal each time said movable platform traverses a predetermined amount of distance during said measurement run, said distance monitor including means for outputting said signal as at least one of a visual alarm, an audible alarm and a tactile alarm wherein said signal serves as an indication to stop said movable platform during said measurement run; and

a data collector coupled to said linear distance sensor and said distance monitor for collecting (i) said measurements of said substantially vertical movement while said movable platform traverses the surface during said measurement run, and (ii) said measurement of inclination at said starting position, said stopping position, and each time said movable platform is stopped during said measurement run following the generation of said signal.

1 26. (Original) A system as in claim 25 further comprising means
2 to pull said movable platform during said measurement run.

Claim 27 (Canceled)

1 28. (Original) A system as in claim 25 wherein all of said at
2 least four supports are wheels.

1 29. (Original) A system as in claim 25 wherein said center
2 support comprises a slidable support that slides on the surface.

1 30. (Original) A system as in claim 25 wherein each of said
2 front support and said center support comprises a slidable
3 support that slides on the surface.

1 31. (Original) A system as in claim 30 wherein said odometer is
2 coupled to said rear support.

1 32. (Original) A system as in claim 25 wherein said data
2 collector includes a processor for processing said measurements
3 of curvature and each said measurement of inclination in
4 accordance with a surface profiling scheme to generate surface
5 profile measurements.

1 33. (Original) A system as in claim 32 further an encryption
2 generator for encrypting said surface profile measurements.

1 34. (New) A system for collecting measurements for use by a
2 surface profiling processing scheme, said system comprising:

3 a movable platform having (i) a frame, (ii) at least four
4 supports coupled to said frame and contacting the surface wherein
5 said frame is supported above the surface, (iii) a first three of
6 said at least four supports being arranged in a linear alignment
7 that defines a direction of travel for said frame, and a
8 remainder of said at least four supports being spaced apart from
9 said linear alignment, (iv) said first three defined by a front
10 support, a rear support and a center support centered between
11 said front support and said rear support, (v) said center support
12 being a floating slidable support that slides on the surface
13 while being capable of substantially vertical movement, and (vi)
14 at least one of said front support and said rear support being a
15 wheel configured to roll in said direction of travel;

16 an odometer coupled to said movable platform for measuring
17 distance that said movable platform traverses during a
18 measurement run on a surface wherein said measurement run is
19 defined by starting and stopping positions on the surface that
20 are spaced apart from one another;

21 first means mounted to said movable platform for generating
22 a measurement of inclination of the surface where said movable
23 platform is positioned when said movable platform is stationary
24 thereon;

25 second means mounted to said movable platform for generating
26 measurements of curvature of the surface as said movable platform

27 traverses the surface;

28 third means mounted on said movable platform and coupled to
29 said odometer for monitoring said distance that said movable
30 platform traverses during said measurement run and for generating
31 a signal each time said movable platform traverses a
32 predetermined amount of distance during said measurement run,
33 wherein said signal serves as an indication to stop said movable
34 platform during said measurement run; and

35 fourth means coupled to said first means and said second
36 means for collecting (i) said measurements of curvature while
37 said movable platform traverses the surface during said
38 measurement run, and (ii) said measurement of inclination at said
39 starting position, said stopping position, and each time said
40 movable platform is stopped during said measurement run following
41 the generation of said signal.

1 35. (New) A system as in claim 34 wherein said first means is an
2 inclinometer mounted on said frame, said inclinometer having an
3 axis of sensitivity that is aligned parallel to said direction of
4 travel.

1 36. (New) A system as in claim 34 wherein said second means is a
2 linear position transducer coupled to said center support for
3 generating said measurements of curvature by measuring said
4 substantially vertical movement of said center support as said
5 movable platform traverses said surface during said measurement
6 run.

1 37. (New) A system as in claim 34 further comprising means to
2 pull said movable platform during said measurement run.

1 38. (New) A system as in claim 34 further comprising fifth means
2 coupled to said fourth means for processing said measurements of
3 curvature and each said measurement of inclination in accordance
4 with a surface profiling scheme to generate surface profile
5 measurements.

1 39. (New) A system as in claim 38 further comprising sixth means
2 for encrypting said surface profile measurements.

1 40. (New) A system for collecting measurements for use by a
2 surface profiling processing scheme, said system comprising:
3 a movable platform having (i) a frame, (ii) at least four
4 supports coupled to said frame and contacting a surface wherein
5 said frame is supported above the surface, (iii) a first three of
6 said at least four supports being arranged in a linear alignment
7 that defines a direction of travel for said frame, and a
8 remainder of said at least four supports being spaced apart from
9 said linear alignment, (iv) said first three defined by a front
10 support, a rear support and a center support centered between
11 said front support and said rear support, (v) said center support
12 being a floating slidable support that slides on the surface
13 while being capable of substantially vertical movement, and (vi)
14 said front support being a slidable support and said rear support
15 being a wheel configured to roll in said direction of travel;
16 an odometer coupled to said movable platform for measuring
17 distance that said movable platform traverses during a
18 measurement run on the surface wherein said measurement run is
19 defined by starting and stopping positions on the surface that
20 are spaced apart from one another;
21 first means mounted to said movable platform for generating
22 a measurement of inclination of the surface where said movable
23 platform is positioned when said movable platform is stationary
24 thereon;
25 second means mounted to said movable platform for generating
26 measurements of curvature of the surface as said movable platform

27 traverses the surface;

28 third means mounted on said movable platform and coupled to
29 said odometer for monitoring said distance that said movable
30 platform traverses during said measurement run and for generating
31 a signal each time said movable platform traverses a
32 predetermined amount of distance during said measurement run,
33 wherein said signal serves as an indication to stop said movable
34 platform during said measurement run; and

35 fourth means coupled to said first means and said second
36 means for collecting (i) said measurements of curvature while
37 said movable platform traverses the surface during said
38 measurement run, and (ii) said measurement of inclination at said
39 starting position, said stopping position, and each time said
40 movable platform is stopped during said measurement run following
41 the generation of said signal.

1 41. (New) A system as in claim 40 wherein said first means is an
2 inclinometer mounted on said frame, said inclinometer having an
3 axis of sensitivity that is aligned parallel to said direction of
4 travel.

1 42. (New) A system as in claim 40 wherein said second means is a
2 linear position transducer coupled to said center support for
3 generating said measurements of curvature by measuring said
4 substantially vertical movement of said center support as said
5 movable platform traverses said surface during said measurement
6 run.

1 43. (New) A system as in claim 40 further comprising means to
2 pull said movable platform during said measurement run.

1 44. (New) A system as in claim 40 further comprising fifth means
2 coupled to said fourth means for processing said measurements of
3 curvature and each said measurement of inclination in accordance
4 with a surface profiling scheme to generate surface profile
5 measurements.

1 45. (New) A system as in claim 44 further comprising sixth means
2 for encrypting said surface profile measurements.

1 46. (New) A system for collecting measurements for use by a
2 surface profiling processing scheme, said system comprising:
3 a movable platform having (i) a frame, (ii) at least four
4 supports coupled to said frame and contacting a surface wherein
5 said frame is supported above the surface, (iii) a first three of
6 said at least four supports being arranged in a linear alignment
7 that defines a direction of travel for said frame, and a
8 remainder of said at least four supports being spaced apart from
9 said linear alignment, (iv) said first three defined by a front
10 support, a rear support and a center support centered between
11 said front support and said rear support, (v) said center support
12 being a floating slidable support that slides on the surface
13 while being capable of substantially vertical movement, and (vi)
14 at least one of said front support and said rear support being a
15 wheel configured to roll in said direction of travel;

16 first means mounted to said movable platform for generating
17 a measurement of inclination of the surface where said movable
18 platform is positioned when said movable platform is stationary
19 thereon;

20 second means mounted to said movable platform for generating
21 measurements of curvature of the surface as said movable platform
22 traverses the surface;

23 third means mounted on said movable platform for monitoring
24 distance that said movable platform traverses during a
25 measurement run on the surface wherein said measurement run is
26 defined by starting and stopping positions on the surface that

are spaced apart from one another, said third means generating a signal each time said movable platform traverses a predetermined amount of distance during said measurement run wherein said signal serves as an indication to stop said movable platform during said measurement run; and

fourth means coupled to said first means and said second means for collecting (i) said measurements of curvature while said movable platform traverses the surface during said measurement run, and (ii) said measurement of inclination at said starting position, said stopping position, and each time said movable platform is stopped during said measurement run following the generation of said signal.

47. (New) A system as in claim 46 wherein said first means is an inclinometer mounted on said frame, said inclinometer having an axis of sensitivity that is aligned parallel to said direction of travel.

48. (New) A system as in claim 46 wherein said second means is a linear position transducer coupled to said center support for generating said measurements of curvature by measuring said substantially vertical movement of said center support as said movable platform traverses said surface during said measurement run.

1 49. (New) A system as in claim 46 further comprising means to
2 pull said movable platform during said measurement run.

1 50. (New) A system as in claim 46 further comprising fifth means
2 coupled to said fourth means for processing said measurements of
3 curvature and each said measurement of inclination in accordance
4 with a surface profiling scheme to generate surface profile
5 measurements.

1 51. (New) A system as in claim 50 further comprising sixth means
2 for encrypting said surface profile measurements.

1 52. (New) A system for collecting measurements for use by a
2 surface profiling processing scheme, said system comprising:
3 a movable platform having (i) a frame, (ii) at least four
4 supports coupled to said frame and contacting a surface wherein
5 said frame is supported above the surface, (iii) a first three of
6 said at least four supports being arranged in a linear alignment
7 that defines a direction of travel for said frame, and a
8 remainder of said at least four supports being spaced apart from
9 said linear alignment, (iv) said first three defined by a front
10 support, a rear support and a center support centered between
11 said front support and said rear support, (v) said center support
12 being a floating slidable support that slides on the surface
13 while being capable of substantially vertical movement, and (vi)
14 said front support being a slidable support and said rear support
15 being a wheel configured to roll in said direction of travel;
16 first means mounted to said movable platform for generating
17 a measurement of inclination of the surface where said movable
18 platform is positioned when said movable platform is stationary
19 thereon;
20 second means mounted to said movable platform for generating
21 measurements of curvature of the surface as said movable platform
22 traverses the surface;
23 third means mounted on said movable platform for monitoring
24 distance that said movable platform traverses during a
25 measurement run on the surface wherein said measurement run is
26 defined by starting and stopping positions on the surface that

are spaced apart from one another, said third means generating a signal each time said movable platform traverses a predetermined amount of distance during said measurement run wherein said signal serves as an indication to stop said movable platform during said measurement run; and

fourth means coupled to said first means and said second means for collecting (i) said measurements of curvature while said movable platform traverses the surface during said measurement run, and (ii) said measurement of inclination at said starting position, said stopping position, and each time said movable platform is stopped during said measurement run following the generation of said signal.

53. (New) A system as in claim 52 wherein said first means is an inclinometer mounted on said frame, said inclinometer having an axis of sensitivity that is aligned parallel to said direction of travel.

54. (New) A system as in claim 52 wherein said second means is a linear position transducer coupled to said center support for generating said measurements of curvature by measuring said substantially vertical movement of said center support as said movable platform traverses said surface during said measurement run.

1 55. (New) A system as in claim 52 further comprising means to
2 pull said movable platform during said measurement run.

1 56. (New) A system as in claim 52 further comprising fifth means
2 coupled to said fourth means for processing said measurements of
3 curvature and each said measurement of inclination in accordance
4 with a surface profiling scheme to generate surface profile
5 measurements.

1 57. (New) A system as in claim 56 further comprising sixth means
2 for encrypting said surface profile measurements.

1 58. (New) A system for collecting measurements for use by a
2 surface profiling processing scheme, said system comprising:

3 a movable platform that includes a frame and at least four
4 supports coupled to said frame and contacting a surface wherein
5 said frame is supported above the surface;

6 a first three of said at least four supports being arranged
7 in a linear alignment that defines a direction of travel for said
8 frame, and a remainder of said at least four supports being
9 spaced apart from said linear alignment;

10 said first three defined by a front support, a rear support
11 and a center support centered between said front support and said
12 rear support;

13 said center support being a floating slidable support that
14 slides on the surface while being capable of substantially
15 vertical movement;

16 at least one of said front support and said rear support
17 being a wheel configured to roll in said direction of travel;

18 an odometer coupled to one of said front support, said rear
19 support and said center support that is said wheel, said odometer
20 measuring distance that said movable platform traverses during a
21 measurement run on the surface wherein said measurement run is
22 defined by starting and stopping positions on the surface that
23 are spaced apart from one another;

24 an inclinometer mounted on said frame, said inclinometer
25 having an axis of sensitivity that is aligned parallel to said
26 direction of travel, said inclinometer generating a measurement

of inclination of the surface where said movable platform is positioned when said movable platform is stationary thereon;

a linear position sensor coupled to said center support for measuring said substantially vertical movement of said center support as said movable platform traverses said surface during said measurement run, wherein measurements of said substantially vertical movement are indicative of measurements of curvature of the surface;

a distance monitor mounted on said movable platform and coupled to said odometer for monitoring said distance that said movable platform traverses during said measurement run and for generating a signal each time said movable platform traverses a predetermined amount of distance during said measurement run, wherein said signal serves as an indication to stop said movable platform during said measurement run; and

a data collector coupled to said linear distance sensor and said distance monitor for collecting (i) said measurements of said substantially vertical movement while said movable platform traverses the surface during said measurement run, and (ii) said measurement of inclination at said starting position, said stopping position, and each time said movable platform is stopped during said measurement run following the generation of said signal.

1 59. (New) A system as in claim 58 further comprising means to
2 pull said movable platform during said measurement run.

1 60. (New) A system as in claim 58 wherein said data collector
2 includes a processor for processing said measurements of
3 curvature and each said measurement of inclination in accordance
4 with a surface profiling scheme to generate surface profile
5 measurements.

1 61. (New) A system as in claim 60 further an encryption
2 generator for encrypting said surface profile measurements.

62. (New) A system for collecting measurements for use by a surface profiling processing scheme, said system comprising:

- a movable platform that includes a frame and at least four supports coupled to said frame and contacting a surface wherein said frame is supported above the surface;
- a first three of said at least four supports being arranged in a linear alignment that defines a direction of travel for said frame, and a remainder of said at least four supports being spaced apart from said linear alignment;
- said first three defined by a front support, a rear support and a center support centered between said front support and said rear support;
- said center support being a floating slidable support that slides on the surface while being capable of substantially vertical movement;
- said front support being a slidable support and said rear support being a wheel configured to roll in said direction of travel;
- an odometer coupled to one of said front support, said rear support and said center support that is said wheel, said odometer measuring distance that said movable platform traverses during a measurement run on the surface wherein said measurement run is defined by starting and stopping positions on the surface that are spaced apart from one another;
- an inclinometer mounted on said frame, said inclinometer having an axis of sensitivity that is aligned parallel to said

direction of travel, said inclinometer generating a measurement of inclination of the surface where said movable platform is positioned when said movable platform is stationary thereon;

a linear position sensor coupled to said center support for measuring said substantially vertical movement of said center support as said movable platform traverses said surface during said measurement run, wherein measurements of said substantially vertical movement are indicative of measurements of curvature of the surface;

a distance monitor mounted on said movable platform and coupled to said odometer for monitoring said distance that said movable platform traverses during said measurement run and for generating a signal each time said movable platform traverses a predetermined amount of distance during said measurement run, wherein said signal serves as an indication to stop said movable platform during said measurement run; and

a data collector coupled to said linear distance sensor and said distance monitor for collecting (i) said measurements of said substantially vertical movement while said movable platform traverses the surface during said measurement run, and (ii) said measurement of inclination at said starting position, said stopping position, and each time said movable platform is stopped during said measurement run following the generation of said signal.

1 63. (New) A system as in claim 62 further comprising means to
2 pull said movable platform during said measurement run.

1 64. (New) A system as in claim 62 wherein said data collector
2 includes a processor for processing said measurements of
3 curvature and each said measurement of inclination in accordance
4 with a surface profiling scheme to generate surface profile
5 measurements.

1 65. (New) A system as in claim 64 further an encryption
2 generator for encrypting said surface profile measurements.